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(21)Application number : 10-167446 (71)Applicant : FUJI PHOTO FILM CO LTD

(22)Date of filing : 15.06.1998 (72)Inventor : IDOTA YOSHIO
MATSUFUJI AKIHIRO
MORI NOBUFUMI
KAGAWA OKIMASA
KASE AKIRA
MIYAMOTO HAJIME

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(54) NON-AQUEOUS SECONDARY BATTERY

(57)Abstract:

PROBLEM TO BE SOLVED: To improve energy quantity of a lithium secondary battery, and improve the cycle lifetime thereof by forming the battery out of a positive electrode having positive electrode active material as a transition metal oxide capable of absorbing and releasing lithium, a negative electrode having negative electrode material using the compound including a silicon atom, and the non- aqueous electrolyte.

SOLUTION: A positive electrode having positive electrode active material LiCoO₂ as a transition metal oxide capable of absorbing and releasing lithium and a mixture material of acetylene black and polyvinylidene fluoride is manufactured. A negative electrode having negative electrode material of the alloy including a silicon atom and having 0.01-50 μm of mean grain size and including at least one kind or more of alkali earth group metal, transition metal and semimetal is manufactured. Furthermore, the colorless electrolyte having a specific gravity at 1.135 and formed by dissolving ethylene carbonate in the di-edthyl carbonate little

by little and dissolving LiBF₄ and LiPF₆ in order is filled between the positive electrode and the negative electrode. With this structure, the discharging capacity, energy quantity and cycle lifetime are improved.

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